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Serial No. 10/556,459
June 15, 2009

REMARKS/ARGUMENTS

Claims 1, 2, 5-7, 9, 10 and 13-14 stand in the present applications, claims 1 and 9 having been amended and claims 3, 4, 11 and 12 having been canceled.

Reconsideration and favorable action is respectfully requested in view of the above amendments and the following remarks.

In the Office Action, the Examiner has rejected claims 1-7 and 9-14 under 35 U.S.C. § 103(a) as being unpatentable over Blanz et al. ("Blanz"). In view of the above-described claim amendments, the Examiner's § 103 rejection of the claims is believed to have been overcome, as will be described in greater detail below.

Applicants have amended independent claims 1 and 9 to more clearly define over the cited art. More particularly, claim 1 has been amended to include the features of dependent claims 3 and 4, and independent claim 9 has been amended to include the feature of dependent claims 11 and 12.

Claim 1 now more precisely recites a method of generating caricatures that is based on transformations to points in an input image as a function of the relative dimensions of the feature areas of the input image compared to the feature areas of a reference image. Thus, this claim no longer just requires that transformations to the original image are done at a feature level, but specifically that transformations to individual points are performed as a function of "the relative dimensions of (a) the

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determined feature area within the input image to (b) the respectively corresponding feature area in the reference image." See, amended claim 1. Support for the amendments can be found in the present specification describing a preferred embodiment at page 12, line 29 to page 15, line 2. Similar clarifying amendments have been made to apparatus claim 9.

In contrast, Blanz simply suggests that image manipulation can be done on a feature level (e.g. morphing of a nose or chin independently from other features), but does not suggest manipulation of the individual image points within a feature area in dependence on "the relative dimensions of the determined feature areas" of the input image and the reference image, as now required by the amended claims. The Examiner has suggested in rejecting claims 4 and 12 (containing the equivalent features) that the claims are obvious in light of the prior art teachings in Blanz at column 2, lines 45-60. See, Office Action at page 7. However, this portion of the cited reference simply says that the facial geometry can be densely sampled under laser scanning. This is not relevant to the specific feature highlighted of "calculating, for each point, the position that said each point should take within a corresponding caricatured image feature area as a function of the relative dimensions of (a) the determined feature area within the input image to (b) the respectively corresponding feature area in the reference image" as required by independent claims 1 and 9. At best, Blanz suggests manipulation at a feature level (albeit possibly at a very a fine grained level), but does

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not define the specific method of manipulation of image points required in independent claims 1 and 9. So, one could argue that Blanz might suggest say transforming the size of the model's nose or mouth as a whole, but not transforming with the specific limitation highlighted above.

As noted above, amended claims 1 and 9 are supported by the preferred embodiment described at page 12, line 29 to page 15, line 2 of the present specification. In particular, the preferred transformations are set out in the equations on page 14, which clearly show relative dimensions of the features found in a mean/prototype face (FM) and corresponding features in a real/input face (FC). This feature of transforming in dependence of relative dimensions of input image features to reference image features results in less distortion to the resulting caricatured image than manipulation of the image as a whole. See, page 15, lines 3-15 and page 17, lines 13-16 of the present specification. Such an aim is not even contemplated in Blanz, which is more focused on mapping input images as precisely as possible to a manipulable model. Accordingly, independent claims 1 and 9 and their respective dependent claims patentably define over Blanz.

Therefore, in view of the above amendments and remarks, it is respectfully requested that the application be reconsidered and that all of claims 1, 2, 5-7, 9, 10, 13 and 14, standing in the application, be allowed and that the case be passed to issue. If there are any other issues remaining which the Examiner believes could be


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resolved through either a supplemental response or an Examiner's amendment,
the Examiner is respectfully requested to contact the undersigned at the local
telephone exchange indicated below.

Respectfully submitted,

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